
**Features**

- 64 element APD array
- High QE >80% for  $\lambda = 760-910$  nm
- High speed, low noise
- High uniformity, low cross talk

**Description**

Matrix APD array for NIR detection. PCB based BGA package with temperature sensor with glass or band pass filter. Non hermetic, suitable for reflow soldering.

**Application**

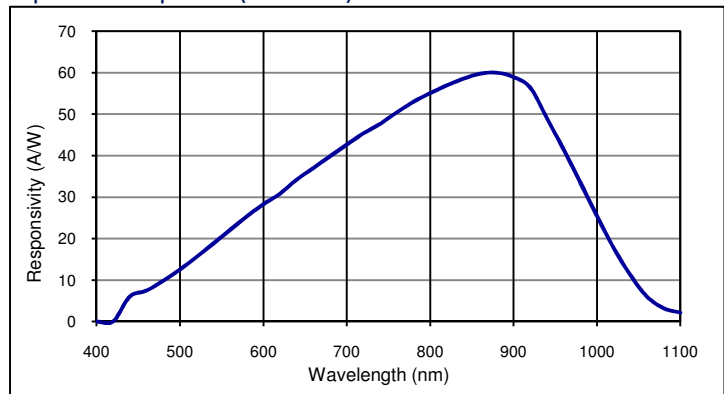
- LIDAR applications
- Shape recognition
- Collision warning
- Focal plane array

**RoHS**

2002/95/EC


**Absolute maximum ratings**

Symbol	Parameter	Min	Max	Unit
$T_{STG}$	Storage temp	-40	100	°C
$T_{OP}$	Operating temp	-20	70	°C
$M_{max}$	Gain ( $I_{PO} = 1$ nA)	200		
$I_{PEAK}$	Peak DC current		0.25	mA

**Spectral response (M = 100)**

**Electro-optical characteristics @ 23°C**

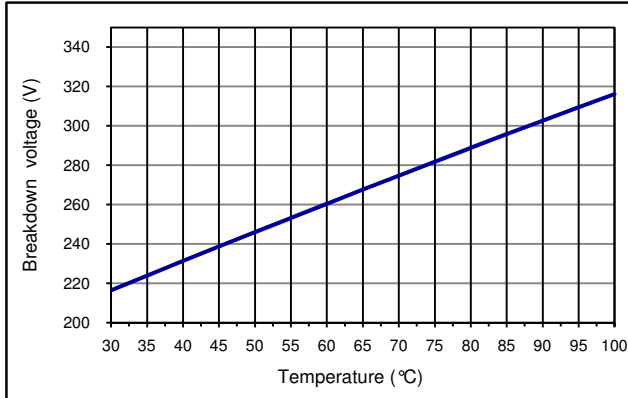
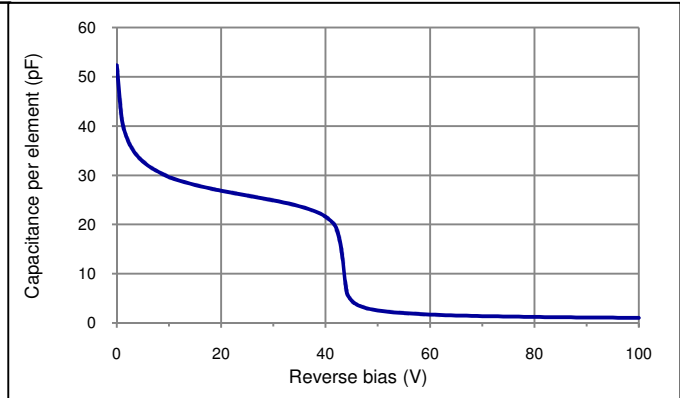
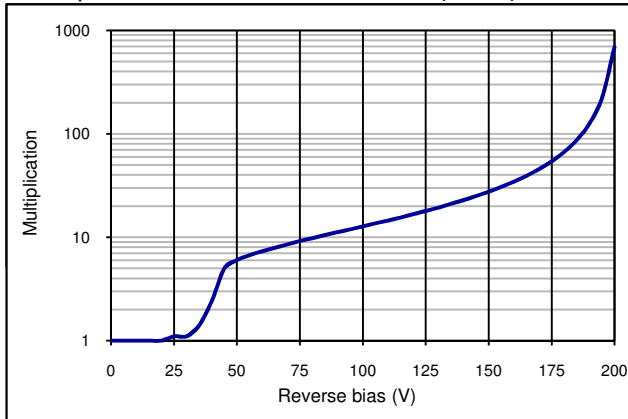
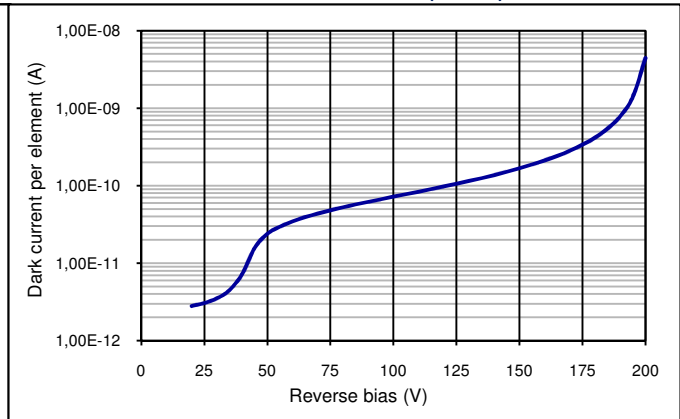
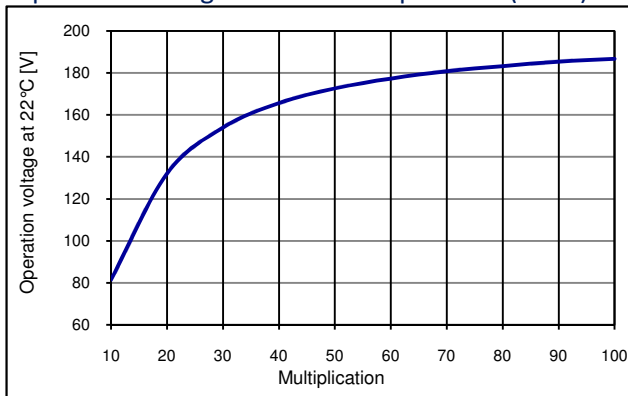
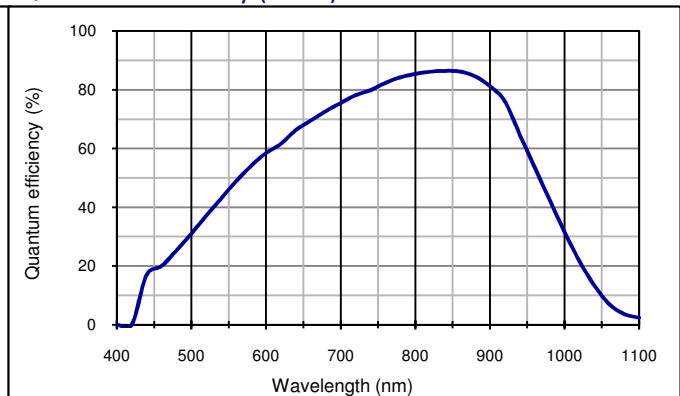
Symbol	Characteristic	Test Condition	Min	Typ	Max	Unit
	No of elements		64			
	Active area		205 x 205			μm
	Gap; Pitch		115 ; 320			μm
$I_D$	Dark current	M = 100; $\lambda = 880$ nm, per element		0.3		nA
C	Capacitance	M = 100, per element		1		pF
	Responsivity	M = 100; $\lambda = 905$ nm	55	60		A/W
$t_R$	Rise time	$V_R = 10$ V; $\lambda = 905$ nm; $R_L = 50$ Ω		2		ns
$V_{BR}$	Breakdown voltage	$I_R = 2$ μA		200		V
	Temperature coefficient			1.45		V/K
	Cross talk	$\lambda = 905$ nm		50		dB
	Photo current uniformity	M = 50		± 5	± 20	%
	Dark current uniformity	M = 50		± 5	± 20	%
	PTC Resistivity			10		kΩ
	PTC Temperature coefficient		3000	3500	4000	ppm/K

**European, International Sales:**


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**USA:**

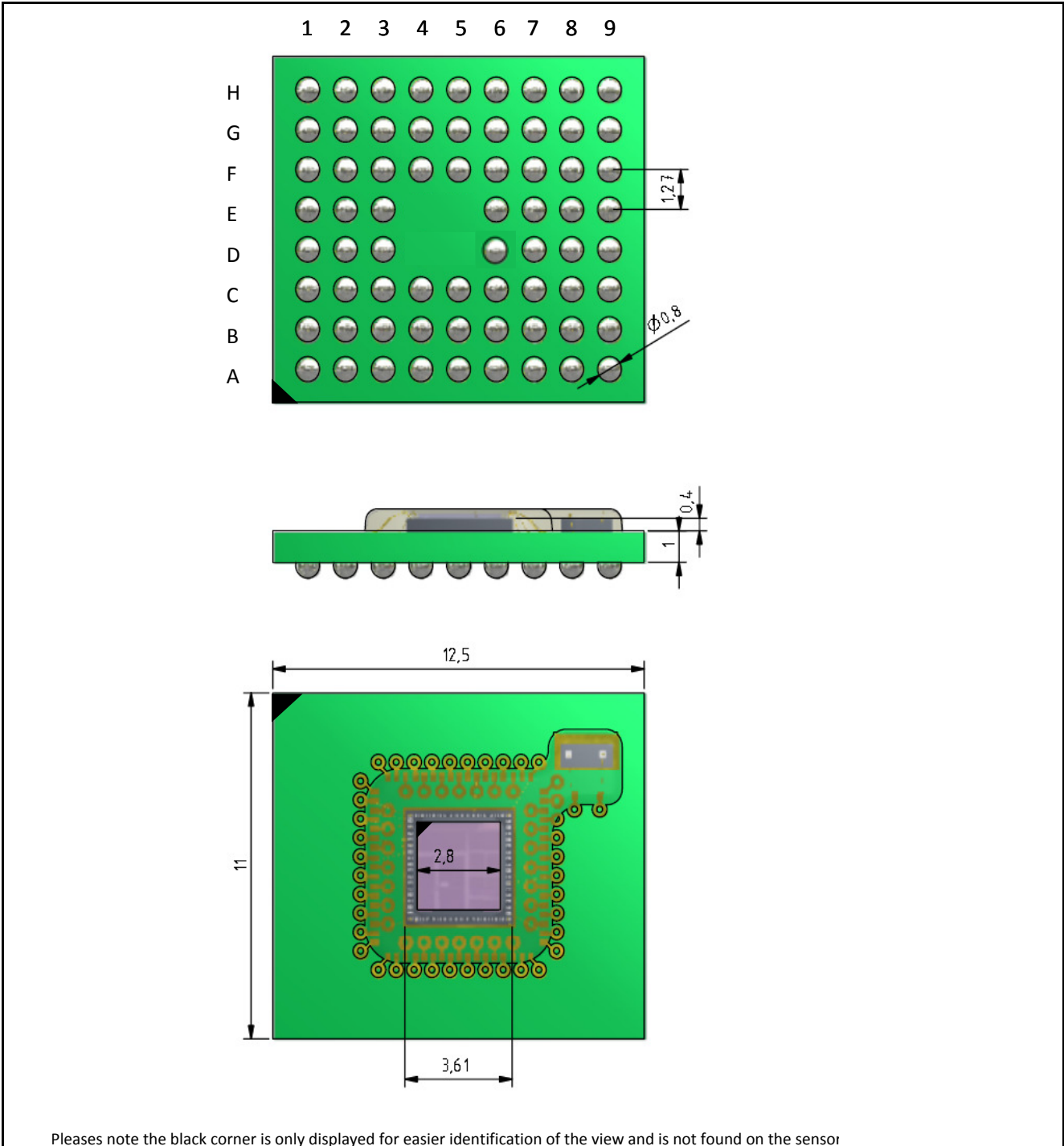

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**$U_{br}$  as fct of temperature (23 °C)**

**Capacitance as fct of reverse bias (23 °C)**

**Multiplication as fct of reverse bias (23 °C)**

**Dark current as fct of reverse bias (23 °C)**

**Operation voltage as fct of multiplication (23 °C)**

**Quantum efficiency (23 °C)**

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**Technical Drawing (not landing pattern)**


**Handling:** Please refer to document "Instructions for handling and processing", suitable for reflow soldering  
Please consider ESD protection while handling.

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**Connection Table**

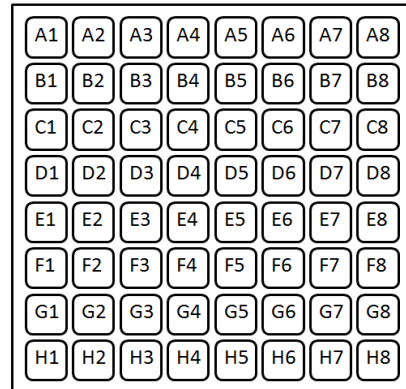
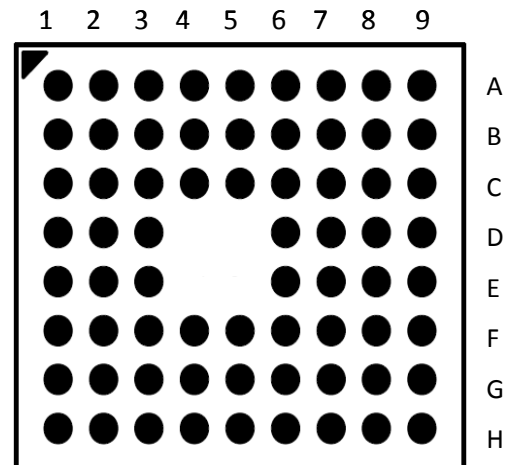
BGA	Contact	BGA	Contact
coordinate		coordinate	
A1	Guard Ring	E1	Cath_APD_E2
A2	Cath_APD_A2	E2	Cath_APD_E1
A3	Cath_APD_B3	E3	Cath_APD_E3
A4	Cath_APD_B4	E4	-
A5	Cath_APD_D5	E5	-
A6	Cath_APD_B5	E6	Cath_APD_E5
A7	Cath_APD_A7	E7	Cath_APD_E8
A8	Cath_APD_B7	E8	Cath_APD_D6
A9	Temp2	E9	Cath_APD_D8
B1	Cath_APD_B1	F1	Cath_APD_F2
B2	Cath_APD_A1	F2	Cath_APD_F1
B3	Cath_APD_D3	F3	Cath_APD_F3
B4	Cath_APD_C3	F4	Cath_APD_H2
B5	Cath_APD_C4	F5	Cath_APD_G4
B6	Cath_APD_A6	F6	Cath_APD_G5
B7	Cath_APD_B6	F7	Cath_APD_F7
B8	Cath_APD_A8	F8	Cath_APD_F8
B9	Temp1	F9	Cath_APD_E7
C1	Cath_APD_C1	G1	Cath_APD_F4
C2	Cath_APD_C2	G2	Cath_APD_G1
C3	Cath_APD_B2	G3	Cath_APD_G2
C4	Cath_APD_A3	G4	Cath_APD_H3
C5	Cath_APD_A4	G5	Cath_APD_F5
C6	Cath_APD_A5	G6	Cath_APD_F6
C7	Cath_APD_B8	G7	Cath_APD_G6
C8	Cath_APD_C7	G8	Cath_APD_G7
C9	Cath_APD_C5	G9	Cath_APD_G8
D1	Cath_APD_D4	H1	Cath_APD_H1
D2	Cath_APD_D1	H2	Cath_APD_G3
D3	Cath_APD_D2	H3	Cath_APD_H4
D4	-	H4	Cath_APD_E4
D5	-	H5	Cath_APD_H5
D6	Anode	H6	Cath_APD_H6
D7	Cath_APD_D7	H7	Cath_APD_E6
D8	Cath_APD_C6	H8	Cath_APD_H7
D9	Cath_APD_C8	H9	Cath_APD_H8

Cath...Cathode

Temp...10 kOhm PTC Temperature sensor

**APD - Array (common anode):**

View on APD chip from above


**Recomendend landing pattern:**


Disclaimer: Due to our strive for continuous improvement, specifications are subject to change within our PCN policy according to JESD46C.

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